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REMARKS

Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the foregoing amendments and the following remarks.

Applicants also respectfully request a personal interview with the Examiner so as to further discuss the subject application and the within arguments. In this regard, Applicants respectfully request the Examiner to contact the undersigned, if not earlier contacted, regarding this request.

Claims 1-8 and 20-21 are pending in the subject application. Claim 9 was previously canceled.

Claims 1-8 and 20-21 stand rejected under 35 U.S.C. §102 and/or 35 U.S.C. §103.

Claims 22-39 were added to more distinctly claim embodiments and aspects of the present invention.

The amendments to the claims are supported by the originally filed disclosure as herein further described.

35 U.S.C. §102 REJECTIONS

The Examiner rejected claims 1, 8, 10-13 and 19-21 under 35 U.S.C. §102(e) as being anticipated by Ino et al. [USP 6,424,328; "Ino"] for the reasons provided on pages 2-6 of the above-referenced Office Action. Applicants respectfully traverse as discussed below. The following addresses the rejections as to the following groupings of claims.

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CLAIMS 1, 8 & 10-12

Claims 1, 8 and 10-12 stand rejected as being anticipated by Ino for the reasons provided on pages 2-4 of the above referenced Office Action. Applicants respectfully traverse.

Applicants claim, claim 1, a display device including an active matrix substrate, a counter electrode, a display medium layer that is interposed between the active matrix substrate and the counter electrode, and a plurality of pixels. The active matrix substrate includes, *inter alia*, a plurality of pixel switching elements and a plurality of gate lines, where the gate lines are provided to control operations of the pixel switching elements; a plurality of data lines and a plurality of data line switching elements, where each data line is connected to associated ones of the pixel electrodes by way of associated ones of the pixel switching elements so as to supply a data signal therethrough; and a control line that is connected to the data line switching elements. As is described in the subject application, signals are sent over the gate lines to selectively turn ON or OFF the data line switching elements and signals are sent over the control line to selectively turn ON or OFF the data line switching elements. As is also set forth in claim 1, for such a display device the signal(s) being transmitted via the control line to turn the data line switching elements ON and the signals being sent via the gate lines to turn the pixel switching elements ON are such that the respective ON signals have mutually different polarities.

In the grounds for rejection, it is asserted that the mutually different polarities are inherent to the switching structure taught by Ino. It also is asserted that the mutuality is governed by the switch control circuit 68 and the different polarities are governed by the image data output at

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Q9N) for each color which combines to form a pixel image. It is further asserted, with reference to figures 15 and 16 in Ino, that the signal SL-1 which corresponds to the data line switching element has an opposite polarity to the signal Vg, which corresponds to the pixel switching elements, specifically when one of the signals SL-2 or SL-3 is activated in the high/ON state. Applicants respectfully disagree with the characterization of the asserted teachings of Ino as it would apply to the present invention.

As shown in figure 15 of Ino, the display thereof includes a pixel for each of red, green and blue. As also shown in figure 15, there are three switching elements 66Rn, 66Gn and 66Bn that are operably coupled between the output of the amplifier 674n and the respective red, green or blue pixel. As clearly described in Ino, the image data is processed so that the red, green and blue data is separated and stored in the memory [P(n)] and output [Q(n)] through the D-A converter and the output circuit. As further described in Ino, these output signals have the same polarity as the common voltage VCOM within 1H. See col. 11, lines 4-10 thereof. It also is provided that the output [Q(n)] of the driver IC 67 is inverted in polarity every 1H (see col. 11, lines 11-12).

Ino further describes that the output is divided and sent to the three signal lines 62R, 62G, and 62B by turning on (closed) and off (open) control of the analog switches (time-division switches) 66R, 66G and 66B caused by the switch control pulses SL1, SL2, and SL3 sent from the switch control circuit 68. Ino also describes that the vertical driving circuit performs vertical scanning and the written display data is written into the pixels on the row-selected by a selection pulse Vg.

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As admitted in the Office action, the switch control circuit 68 outputs three switch control pulses one for each of the red, green and blue data so that the signal corresponding to such data is written into the respective, red, green and blue pixel. In figure 16 each of the ON pulses is illustrated as having a rising and falling edge. Also, the selection pulse in figure 16 also is shown as having a rising and falling edge. While these figures are completely void of any indication of the polarity of any signal, it can hardly be said that one signal shown as having a rising and falling edge is different in polarity from a signal that also is depicted as having a rising and falling edge. Also, it is incorrect to assume that the portion of the SLI signal that follows the falling edge corresponds to an ON state. This portion of the curve would necessarily have to correspond to the OFF state of the switch.

Thus, it is respectfully submitted that the assertion that the SLI signal and the Vg signal have opposite polarities during the time period image data is being written to the red pixel is clearly erroneous.

The discussion in Ino clearly talks about the polarity of VCOM and Q(n). In regards to the embodiment shown in figure 15 of Ino, it also is provided that the image data input to the driver IC 67 is inverted in polarity every 1H against the common voltage VCOM. There is no discussion, however, anywhere in Ino that describes the potential of the selection voltage Vg and the voltage of the switching control pulses. As to figure 15, Ino further includes a discussion (see col. 11 lines 35-62) about the effect of capacitance coupling in the LCD panel. It is described therein that because the RGC data is written at different times, corresponding to red, green and blue, the fluctuations of the potentials of the signal lines in each color is almost constant and that

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this potential difference does not appear as a luminance difference. In terms of the sense of sight, Ino provides that the fluctuation appears as only a minute color difference and that it practically causes no problem.

The foregoing is inconsistent with the teachings of the present invention as to the beneficial effect described in the subject application that would result from having the polarities of the signals turning the data line switching elements and the pixel switching elements ON to be opposite to each other. In the present invention, the polarities of these ON switching signals are arranged so as to be opposite to each other so that the differential voltages that result can cancel each other at least in part.

In sum, the disclosure and teaching in Ino is such that no one skilled in the art could reasonably assert that Ino necessarily inherently discloses having such switching signals outputted so as to have the opposite polarities.

Applicants also adopt herein the prior arguments of record as to why the teachings and disclosures in Ino do not inherently disclose the claimed invention.

As claim 8 depends from claim 1, Applicants respectfully submit that at least because of its dependency from a base that is believed to be allowable, claim 8 is considered to be patentable.

As to claims 10-12 each of these claims includes the limitation that a signal to turn ON the data line switching elements and a signal to turn ON the pixel switching elements have "mutually different polarities." Applicants respectfully submit that claims 10-12 are patentable over Ino at least for the reasons provided above distinguishing claim 1 from Ino.

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It is respectfully submitted that claims 1, 8 and 10-12 are patentable over the cited reference for the foregoing reasons.

CLAIMS 13, 19-21

Claims 13 and 19-21 stand rejected as being anticipated by Ino for the reasons provided on pages 5-6 of the above referenced Office Action. Applicants respectfully traverse.

Applicants claim, claim 13, a display device that includes a pair of substrates that is disposed so as to face each other and to be spaced apart from each other, a display medium layer interposed between the pair of substrates, and a plurality of pixels, where a plurality of *counter signal electrodes*, each of which extends in a column direction and through which a data signal is supplied, are formed on one of the pair of substrates. Such a display device also includes a plurality of signal electrode switching elements, each of which is connected to associated one of the counter signal electrodes and controls supply of the data signal to the counter signal electrode.

The other of the pair of substrates includes a plurality of pixel electrodes arranged in matrix, each said pixel electrode being associated with one of the plurality of pixels, a plurality of pixel switching elements, each of which is connected to associated one of the pixel electrodes, a plurality of gate lines, which extend in a row direction and are used for controlling operations of the pixel switching elements and a plurality of common lines, each of which is connected to associated ones of the pixel electrodes by way of associated ones of the pixel switching elements.

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In such a display device a signal to turn ON the signal electrode switching elements and a signal to turn ON the pixel switching elements has the same polarity.

Ino describes a display section that is made up of the gate lines, the signal lines and pixels that are formed on a transparent substrate and another transparent substrate on which is formed an opposite electrode. It is clear from the further discussion in col. 5, lines 23-27 and col. 9, lines 32-39, that the opposite electrode in Ino is the electrode to which is applied the *common voltage VCOM*.

This is different in structure and function from the claimed display device as in the claimed device there is provided a plurality of *counter signal electrodes*, each of which extends in a column direction and through which a data signal is supplied on one of the substrates. In other words, the device disclosed and described in Ino is arranged so VCOM is on the opposite electrode whereas in the present invention, display signals are inputted to the plurality of counter electrodes.

Thus, the opposite electrode in Ino does NOT correspond to the plurality of counter signal electrodes of the claimed display device.

As claim 19 depends from claim 13, Applicants respectfully submit that at least because of its dependency from a base that is believed to be allowable, claim 19 is considered to be patentable.

Applicants respectfully submit that the foregoing remarks distinguishing the display device of claim 13 from Ino, also apply to distinguish the display device of claim 21 and the method for driving a display device of claim 20 from the cited reference.

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As to claim 20, Applicants make the following further observation. As indicated in the discussion above, figure 16 in Ino illustrates that when the data line switching elements and the pixel switching elements are turned ON the potentials are high. Ino also shows that when the switching element of the red pixel is OFF (opened switch), the Vg signal pulse remains high. It thus necessarily follows that it cannot be said that the respective OFF conditions can overlap. Thus, claim 20 is distinguishable from Ino for this additional reason.

It is respectfully submitted that claims 13 and 19-21 are patentable over the cited reference for the foregoing reasons.

The following additional remarks shall apply to each of the above.

As provided in MPEP-2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Or stated another way, "The identical invention must be shown in as complete detail as is contained in the ... claims. *Richardson v Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ 2d. 1913, 1920 (Fed. Cir. 1989). Although identify of terminology is not required, the elements must be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). It is clear from the foregoing remarks that the above identified claims are not anticipated by the cited reference.

In deciding the issue of anticipation, the trier of fact must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify *corresponding elements* disclosed in the allegedly anticipating reference (emphasis added, citations

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in support omitted). *Lindemann Maschinenfabrik GMBM v. American Hoist and Derrick Company et al.*, 730 F. 2d 1452, 221 USPQ 481,485 (Fed. Cir. 1984).

It is respectfully submitted that for the foregoing reasons, claims 1-8 and 10-21 are patentable over the cited reference and satisfy the requirements of 35 U.S.C. §102(c). As such, these claims, including the claims dependent therefrom are allowable.

35 U.S.C. §103 REJECTIONS

Claims 2-7 and 14-18 stand rejected under 35 U.S.C. §103 as being unpatentable over Ino et al. [USP 6,424,328; "Ino"] in view of Ichikawa et al. [USP 6,559,821; "Ichikawa"] for the reasons provided on pages 7-8 of the above-referenced Office Action. Applicants respectfully traverse as discussed below.

Each of claims 2-7 depend directly or ultimately from claim 1 and each of claims 14-18 depend directly or ultimately from claim 13. As indicated in the respective discussions above in connection with the §102 rejections of these claims, Ino does not disclose the display device as set forth in either of claim 1 or claim 13. It also is respectfully submitted that Ino does not teach or suggest a display device as set forth in either of claims 1 or 13. Ino also does not teach, suggest or offer any motivation to modify the display device disclosed in Ino so as to yield the display device as set forth in either of claims 1 or 13, nor does Ino provide any indication that such a modification would be reasonably successful. As such, at least because of their dependency from base claim that is considered to be allowable, each of claims 2-7 and 14-18 are considered to be allowable over the combination of Ino and Ichikawa.

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It is respectfully submitted that for the foregoing reasons, claims 2-7 and 14-18 are patentable over the cited reference(s) and thus satisfy the requirements of 35 U.S.C. §103. As such, these claims are allowable.

CLAIMS 22-39

As indicated above, claims 22-39 were added to more distinctly claim embodiments of the present invention. These claims are clearly supported by the originally filed disclosure, including the originally filed claims (e.g., see paragraphs 0017, 0019, 0034-0035, 0069, 0081-0082 and 0141). It also is respectfully submitted that these added claims are patentable over the cited prior art on which the above-described rejection(s) are based.

OTHER MATTERS

Applicants filed a Supplemental Information Disclosure Statement/ Search Report Information Disclosure Statement dated August 4, 2005 in the USPTO, which IDS post-dates the above-referenced Office Action. Accordingly, Applicants respectfully request that the Examiner reflect their consideration of the IDS in the next official communication from the USPTO.

Applicants also respectfully request the Examiner to call the undersigned collect and the below number in the event that this IDS has not been received by the Examiner and thus needs to be again submitted by Applicants for the Examiner's consideration.

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It is respectfully submitted that the subject application is in a condition for allowance.

Early and favorable action is requested.

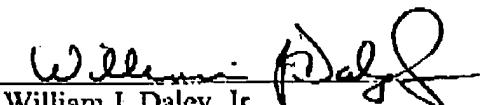
Because the total number of claims and/or the total number of independent claims post amendment now exceed the highest number previously paid for, authorization is provided herewith to charge the below-identified deposit account for the required additional fees.

However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No. 04-1105.

Respectfully submitted,
Edwards & Angell, LLP

Date: September 6, 2005

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